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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/712,029	11/13/2000	Dae-Woo Lee	4234-9	9120

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EXAMINER	
GOFF II, JOHN L	

ART UNIT	PAPER NUMBER
1733	

DATE MAILED: 03/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/712,029	LEE, DAE-WOO	
	Examiner	Art Unit	
	John L. Goff	1733	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 December 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *12-14 and 17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *12-14 and 17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This action is in response to the amendment filed on 12/31/03.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Specification

3. The substitute specification filed 11/28/03 has not been entered because it does not contain the table from the original specification. It is noted a substitute specification containing the table would be entered and as such would overcome the previous objection to the specification. However, an additional objection to the specification is made wherein applicant is asked to amend the specification to include the generic terminology for the vulcanizing agents DM, D, T/T, and NA22 disclosed on page 9, line 15.

Claim Rejections - 35 USC § 112

4. Claims 12-16 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 12 requires "extruding a raw rubber material". It is unclear where in the specification the raw rubber material is disclosed as "extruded". It is noted claim 12 originally required "rolling and forcing out the raw rubber material". However, "rolling and forcing out

of" does not require an extrusion process. It is suggest applicant delete "extruding a raw rubber material to manufacture a waterproof sheet with constant width and thickness" and insert - - forming the raw rubber material into a waterproof sheet with constant width and thickness - - to overcome the rejection.

Claim Rejections - 35 USC § 103

5. Claims 12, 13, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Draexler (U.S. Patent 4,551,392) in view of Hoover (U.S. Patent 2,656,292) and Fuji et al. (U.S. Patent 4,174,993 newly cited).

Draexler is directed to a vulcanizable adhesive waterproof sheet for use in a building element wherein the building element comprises multiple sheets (layers) laminated together including the vulcanizable adhesive waterproof sheet, the vulcanizable adhesive waterproof sheet comprising EPDM (synthetic rubber), vulcanizing agent (including accelerators), and additives (Column 1, lines 6-7 and 46-49 and Column 2, lines 12-16 and 45-54). Draexler teaches that the vulcanizable sheet is resistant to heat and ozone and exhibits swelling resistance against polar, organic media (water) (Column 1, lines 9-11). Draexler teaches that the additives in the vulcanizable sheet include age resister (age retarders including but not limited to quinoline type (e.g. polymerized trimethyl dihydroquinoline)), an adhesion-providing agent (tackifying resin), a softener (plasticizer oils), and a filler material (Column 2, lines 55-63 and Column 4, line 55). Draexler teaches amounts of each additive can be conventionally determined (Column 2, lines 62-63). Draexler teaches using conventional techniques such as mixers, rollers, extruders, and calenders to form the EPDM, vulcanizing agent, and additives into a vulcanizable adhesive

waterproof sheet of a desired width and thickness (Column 3, lines 5-15 and 49-51 and Column 4, lines 14-17). The vulcanizable sheet can then be laminated to other material sheets to form a building element (Column 4, lines 14-15). Draexler is silent as to attaching a release paper to upper and lower surfaces of the vulcanizable sheet. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Draexler to include providing a release paper on the upper and lower surfaces of the vulcanizable sheet as suggested by Hoover to prevent tearing or damaging the sheet during handling, storage, or transportation of the sheet prior to laminating the sheet with other material sheets to form a building element.

It is noted Draexler does not explicitly recite the amount of adhesion-providing agent used. However, as noted above Draexler teaches that amounts of each additive can be conventionally determined, and the vulcanizable sheet is used in lamination processes. It would have been obvious to one of ordinary skill in the art at the time the invention was made to experimentally determine/optimize the required amount of each additive including the adhesion-providing agent as a function of the properties (e.g. adhesiveness) of the vulcanizable adhesive waterproof sheet produced as doing so would have required nothing more than ordinary skill and routine experimentation with it being further taken that conventional amounts of adhesion-providing agents in vulcanizable adhesive waterproof compositions includes 41% of the weight of the rubber main material as shown for example by Fuji et al.

Regarding claim 17, it would have been obvious to one of ordinary skill in the art at the time the invention was made when making the preformed sheet taught by Draexler as modified by Hoover and Fuji et al. to cut the sheets such that they have a constant length from the

extrusion process to form preforms useful as a product for use in a variety of different applications.

Hoover is directed to a tacky rubber sheet having a non-stick liner applied to both sides of the sheet (Figures 1-3 and Column 1, lines 1-12 and Column 3, lines 13-16 and 24-29). Hoover teaches that the liner prevents tearing or damaging the sheet during handling, storage, or transportation (Column 2, lines 24-30).

Fuji et al. disclose a vulcanizable adhesive waterproof composition (e.g. formable into sheets) having high adhesion to wet cement used in laminations for building elements wherein the composition comprises butyl rubber, vulcanizing agent (e.g. zinc oxide), and additives. Fuji et al. teach that the additives in the composition include an adhesion-providing agent (synthetic resin such as a petroleum resin), a softener (plasticizer oils), and a filler material. Fuji et al. teach using amounts of adhesion-providing agent at 20-200% of the weight of the rubber main material (Column 1, lines 11-39 and Column 3, lines 15-23 and Table 2 and Column 5, lines 58-64).

Regarding claim 13, Draexler is silent as to using petroleum resin as the adhesion-providing agent. However, it is noted Draexler is not limited to any particular adhesion-providing agent such that it would have been obvious to one of ordinary skill in the art at the time the invention was made to use as the adhesion-providing agent in the method taught by Draexler as modified by Hoover and Fuji et al. petroleum resin as this was a well known and conventional adhesion-providing agents (tackifying resins) useful in vulcanizable adhesive waterproof compositions as shown for example by Fuji et al.

6. Claim 13 is further rejected under 35 U.S.C. 103(a) as being unpatentable over Draexler, Hoover, and Fuji et al. as applied above in paragraph 5, and further in view of Koizumi et al. (U.S. Patent 4,707,528), Takaki et al. (U.S. Patent 5,049,610), and Davis et al. (U.S. Patent 5,612,141).

Draexler, Hoover, and Fuji et al. as applied above teach all of the limitations in claim 13 except for a teaching on using polybutene and phenol-formaldehyde resin as the adhesion-providing agent (tackifying resin). However, it is noted Draexler is not limited to any particular adhesion-providing agent such that it would have been obvious to one of ordinary skill in the art at the time the invention was made to use as the adhesion-providing agent in the method taught by Draexler as modified by Hoover and Fuji et al. polybutene, phenol-formaldehyde resin, or petroleum resin as these were well known and conventional adhesion-providing agents (tackifying resins) useful in rubber compositions as shown for example by Koizumi et al., Takaki et al., and Davis et al.

Koizumi et al. are directed to a tacky rubber resin where the tack is provided by an adhesion-providing agent (tackifying resin) such as polybutene, phenol-formaldehyde resin, or petroleum resin (Column 2, lines 49-68 and Column 3, lines 1-21). Takaki et al. are directed to rubber compositions comprising an adhesion-providing agent (tackifying resin) wherein the adhesion-providing agent can be polybutene, phenol-formaldehyde resin, or petroleum resin (Column 25, lines 24-42). Davis et al. are directed to an adhesive rubber tape having tackiness provided by resins such as polybutene, phenol-formaldehyde resin, or petroleum resin (Column 10, lines 25-44).

7. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Draexler, Hoover, and Fuji et al. as applied above in paragraph 5, and further in view of Nottebohm (U.S. Patent 2,338,960) and McCortney (U.S. Patent 2,080,730).

Draexler, Hoover, and Fuji et al. as applied above teach all of the limitations in claim 14 except for a teaching on using tragacanth rubber as the adhesion-providing agent (tackifying resin). However, it is noted Draexler is not limited to any particular adhesion-providing agent such that it would have been obvious to one of ordinary skill in the art at the time the invention to use as the adhesion-providing agent in the method taught by Draexler as modified by Hoover and Fuji et al. tragacanth rubber as this was a well known and conventional adhesion-providing agent (tackifying resin) useful in rubber compositions as shown for example by Nottebohm and McCortney.

Nottebohm is directed to a rubber binder that includes tragacanth as the binding agent (Column 1, lines 44-55 and Column 2, lines 1-2). McCortney is directed to a rubber cement composition that includes tragacanth as the resin (Page 1, lines 7-12 and Page 2, lines 25-30).

Response to Arguments

8. Applicant's arguments with respect to claims 12-14 and 17 have been considered but are moot in view of the new ground(s) of rejection. It is noted applicant has argued by way of a declaration by the inventor "Applicants submit the Declaration under 37 CFR 1.132 of Dae Woo Lee. Mr. Lee is a chemical engineer with over three decades' experience in adhesive waterproof materials technology and more than fifty Korean patents in this technology. It is Mr. Lee's expert opinion that conventional rubber composites contained an adhesion-providing agent in the

range of 1-5%. He finds no teaching or suggestion to employ such an elevated adhesion-providing agent ratio in either Draexler '392 or Hoover '292. Mr. Lee further avers that both the use of the adhesion-providing agent ratio as recited in claim 12 (about 41% by weight) in an adhesive waterproof rubber composite, as well as the benefit of a composite so made, would be unobvious to one of ordinary skill in the art." In view of applicants declaration Fuji et al. has been cited as an exemplary teaching in the art of the amount of adhesion-providing agent used in conventional adhesive waterproof rubber compositions as including at least 41%. A new rejection of Draexler in view of Hoover and Fuji et al. is set forth above.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **John L. Goff** whose telephone number is **(571) 272-1216**. The examiner can normally be reached on M-F (7:15 AM - 3:45 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

John L. Goff
March 8, 2004

JEFF H. AFTERGUT
PRIMARY EXAMINER
GROUP 1300